

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
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NEW YORK, NY 10154

PCT

WRITTEN OPINION

(PCT Rule 66)

Applicant's or agent's file reference 4024-4012PC		Date of Mailing (day/month/year) 10 OCT 2006
International application No. PCT/US02/22052		REPLY DUE within 2 months/days from the above date of mailing
International filing date (day/month/year) 28 June 2002 (28.06.2002)	Priority date (day/month/year) 29 June 2001 (29.06.2001)	
International Patent Classification (IPC) or both national classification and IPC IPC: G02B 6/38(2006.01) USPC: 385/39,59,71		
Applicant XANOPTIX, INC.		

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:

- | | | | |
|------|-------------------------------------|--|--|
| I | <input checked="" type="checkbox"/> | Basis of the opinion | CASE <u>4024-4012 PC</u> ATTY <u>RS</u>
DUE <u>December 10, 2006</u>
1 mo. call-up <u>Nov 10, 2006</u>
BY <u>JM</u> |
| II | <input type="checkbox"/> | Priority | |
| III | <input type="checkbox"/> | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | |
| IV | <input type="checkbox"/> | Lack of unity of invention | |
| V | <input checked="" type="checkbox"/> | Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement | |
| VI | <input type="checkbox"/> | Certain documents cited | |
| VII | <input type="checkbox"/> | Certain defects in the international application | |
| VIII | <input type="checkbox"/> | Certain observations on the international application | |

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 29 October 2003 (29.10.2003)

name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer <u>Lylea Delee For</u> Jerry T Rahll Telephone No. (571) 272-2356
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Form PCT/IPEA/408 (cover sheet)(July 1998)

RECEIVED
DATE 10/19 BY [Signature]

WRITTEN OPINION

International application No.

PCT/US02/22052

I. Basis of the opinion

1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
pages 1-25 and 32, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the claims:
pages 26-31, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the drawings:
pages 1-20, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINIONInternational application No.
PCT/US02/22052**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>2-4, 7, 9, 11-39</u>	YES
	Claims <u>1, 5, 6, 8, 10</u>	NO
Inventive Step (IS)	Claims <u>2-4, 7, 9, 11-20, 22-39</u>	YES
	Claims <u>1, 5, 6, 8, 10, 21</u>	NO
Industrial Applicability (IA)	Claims <u>1-39</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Please See Continuation Sheet

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V. 2. Citations and Explanations:

Claims 1, 5, 6, 8, and 10 lack novelty under PCT Article 33(2) as being anticipated by US Patent No 5,671,311 to Stillie et al.

Regarding Claim 1, Stillie et al. describes an apparatus (2) with an assembly of a set of slices (12, 14, 16, 18) having multiple through holes (see figure 2), where at least some of the through holes on adjoining slices are aligned with respect to each other to define a conduit (see Figure 1), and a transmission medium within the holes.

Regarding Claim 5, Stillie et al. describes the through holed on adjoining slices axially aligned to each other (see figure 1).

Regarding Claim 6, Stillie et al. describes the through holes as fiber holes (see Figure 1).

Regarding Claim 8, Stillie et al. describes the through holes as having straight sidewalls (see Figure 2).

Regarding Claim 10, Stillie et al. describes the device such that a cross-section of the assembly taken along a through hole axis shows the through holes collectively comprising a series of parallel conduits (see Figure 2).

Claim 21 lacks an inventive step under PCT Article 33(3) as being obvious over Stillie et al. Drilling is a well-known method of forming holes in thin pieces. Using such a method of forming the holes in the device of Stillie et al. involves no inventive step.

Claims 2-4, 7, 9, 11-20, and 22-24 the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the limitations of the claims.

Regarding Claims 2 and 25-36, the prior art does not describe epoxy on the holes of the slices.

Regarding Claims 3-4, the prior art does not describe a metal layer coating the periphery of the conduit.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Regarding Claims 7 and 38-39, the prior art does not describe the through holes of two adjoining slices as misaligned.

Regarding Claim 9, the prior art does not describe the cross section of the through holes forming a Y branch.

Regarding Claim 11, the prior art does not describe two holes on a first slice aligned with a common single common hole on a second adjoining slice.

Regarding Claims 12-15, the prior art does not describe the through holes having tapered sidewalls.

Regarding Claims 16-20 and 22-24, the prior art does not describe the slices formed of a silicon wafer or the through holes created using an etching process.

Regarding Claims 25-36, the prior art does not describe through holes having openings of different sizes on different surfaces.

Regarding Claim 9, the prior art does not describe a curing step to form the assembly.

Claims 1-39 the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----